Claims

What is Claimed is:

1.   A computer system for identifying a target component in an apparatus that has components related in a hierarchy, the computer system comprising:

a first computer executing a first application in that objects represent corresponding components, wherein the first application relates the objects in a type-object hierarchy;

a second computer coupled to the first computer via a network;

wherein the first computer has a message generator that receives type-object hierarchy information from the application and that provides a message with a type chain in parent-child direction and an object chain also in parent-child direction, wherein both chains in combination identify a target object that corresponds to the target component; and

wherein the second computer has a message interpreter that parses both chains to provide identification of the target component with type and object as well as identification of the parent components with types and objects.

2.   The computer system of claim 1, wherein the first computer presents type-object hierarchy information to a first user and thereby adds type statements in a first language, and wherein the second computer presents identification of types in a second language.

3.   The computer system of claim 1, wherein the message generator at the first computer appends an identifier type to the type chain, and appends an identifier object to the object chain.

1   4.   A method for identifying a target component in an apparatus that has components

2   related in hierarchy, the method comprising:

3   representing the components by corresponding objects, thereby relating the objects in

4   a type-object hierarchy;

5   deriving a message from the type-object hierarchy, the message with a type chain in a

6   parent-child direction and an object chain also in the parent-child direction, wherein both

7   chains in combination identify a target object that corresponds to the target component; and

8   parsing the message to provide identification of the target component with type and

9   object as well as identification of the parent components with types and objects.

1   5.   The method of claim 4, further comprising displaying the identification of the target

2   component with type statements, wherein the type statements are provided locally.

6.   A combination of complementary first and second computer program products, for use in a computer system to identify a target component of an apparatus that has a plurality of components related in hierarchy, both computer program products having computer instructions that are distributed in the system as follows:

in the first computer program product to control a first computer, instructions to represent the components by corresponding objects, and thereby to relate the objects in a type-object hierarchy;

in the first computer program product, further instructions to derive a message from the type-object hierarchy, the message with a type chain in a parent-child direction and an object chain also in the parent-child direction, wherein both chains in combination identify a target object that corresponds to the target component; and

in the second computer program product to control a second computer, instructions to parse the message to provide identification of the target component with type and object as well as identification of the parent components with types and objects.

1   7.   A method for identifying a target object by a first computer run-time environment to a

2   second run-time environment, the method comprising:

3   representing a plurality of objects by the first run-time environment, thereby relating

4   the objects in a type-object hierarchy;

5   deriving a message from the type-object hierarchy, the message with a type chain in a

6   parent-child direction and an object chain also in the parent-child direction, wherein both

7   chains in combination identify the target object;

8   forwarding the message to the second run-time environment; and

9   parsing the message by the second run-time environment to provide identification of

10   the target component with type and object as well as identification of the parent components

11   with types and objects.

1   8.   The method of claim 7, wherein first and second run-time environments use different

2   object models.